REMARKS

I. STATUS OF CLAIMS

Claims 1-55 were previously pending in this Application. By this Amendment, claims 1, 34, 38, 47, and 51 have been amended and claims 10 and 39 have been canceled. Claims 1, 47, and 51 have been amended to recite, *inter alia*, that "at least 85% by weight of the kaolin has an esd of less than 1 μm." Support for that amendment can be found in at least original claim 10 and paragraph [021] of the original application. Claim 38 has been amended to incorporate the recitation of original claim 39 and to recite, *inter alia*, a classified kaolin slurry, consistent with the terminology already present in the claim. No new matter has been added by this Amendment and, thus, claims 1-9, 11-38, and 40-55 should be properly pending before the Office.

Claims 1-9, 16, 18-19, and 47-53 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,402,826 to Yuan et al. ("Yuan"). Claims 1, 10-17, 20-36, 38-46, and 54-55 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,610,137 to Golley et al. ("Golley"). Claim 37 stands rejected under 35 U.S.C. § 103(a) as obvious over Golley. For at least the reasons discussed herein, Applicant believes that all pending claims are allowable.

II. OBJECTION TO CLAIM 34

Claim 34 was objected to for the inadvertent omission of the numeric identifier "34". By this Amendment, claim 34 has been amended to identify the claim number as "34" and Applicant respectfully requests the withdrawal of this objection.

III. REJECTIONS UNDER 35 U.S.C. § 102(e)

A. YUAN

Claims 1-9, 16, 18-19, and 47-53 have been rejected as allegedly anticipated by Yuan. The Office asserts that Yuan "disclose[s] a kaolin composition having a shape factor [of] at least 12, 72-82 weight % of particles having an esd less than 1 μm, and about 15-30 weight % particles having an esd less than 0.25 μm." Office Action at page 2 (internal citations omitted). At least for the reason that Yuan does not teach the particle size distribution recited in the pending claims, Applicant respectfully traverses.

Independent claims 1, 47, and 51 each recite, *inter alia*, that "at least about 85% by weight of the kaolin [has] an esd of less than about 1 μm." Yuan does not teach a kaolin esd within this range. Yuan appears to disclose an equivalent size distribution of 72-82% of its kaolin having an esd less than 1 μm. *See* col. 8, Line 58. It is well established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP § 2131. Since Yuan does not expressly teach a composition where at least 85% of particles have an esd of less than 1 μm, Yuan does not teach each element of independent claims 1, 47, and 51 and, accordingly, cannot anticipate the pending claims. For at least the reasons discussed herein, Applicant respectfully requests withdrawal and reconsideration of this aspect of the rejection under 35 U.S.C. § 102(e).

B. GOLLEY

Claims 1, 10-17, 20-36, 38-46, and 54-55 have been rejected as purportedly anticipated by Golley. The Office asserts that Golley discloses "a kaolin composition having a shape factor [of] at least 50, at least 72 weight % of particles having an esd less than 1 μm and 35 weight % of particles having an esd less than 0.25 μm." Office Action at page 5 (internal citations omitted). Applicant respectfully traverses.

Claim 1, as amended herein, recites in part that "at least about 85% by weight of the kaolin [has] an esd of less than about 1 μm." Golley does not expressly teach a particle size distribution, or in this instance an esd, within that range. The Office appears to assert that the recitation of "at least about 80%" (amended herein to "at least about 85%") falls within Golley's disclosure of "at least 72%," which is not consistent with the disclosure of Golley or how the skilled artisan would readily understand the presentation of esd.

Golley discloses esd values as measured by a SEDIGRAPH instrument. It states that "[t]he SEDIGRAPH instruments [sic] measures and graphically records the percentage by weight of particles having esd less than a certain esd value versus esd." Col. 6, lines 39-41. The instant application similarly states that the SEDIGRAPH instrument provides data corresponding to the weight percentage of "particles having an esd less than a particular esd value, versus that esd value". Paragraph [0019]. In that way, the SEDIGRAPH instrument provides "at least" the maximum percentage of particles having less than a certain value in μm. For instance, if the SEDIGRAPH reports at least 30% of the particles to have an esd less than 0.5 μm, then a maximum of 30% of the particles—or "at least 30% of the particles"—have an esd less than 0.5

μm. In other words, a minimum of 70% of the particles have an esd greater than 0.5 μm. Despite that potentially confusing use of "at least," the terminology is common in the kaolin industry for describing esd. *See, e.g.*, U.S. Patent Nos. 6,057,404; 6,564,199; and 6,652,642.

The Office appears to equate an esd disclosure of at least about 72%, as in Golly, to include those percentages ranging from about 72% to 100%. However, in light of standard esd terminology, Golley teaches that a maximum of about 72% of the particles have an esd less than 1 μm—i.e., from 0 to about 72%. Accordingly, Golley does not expressly disclose a kaolin composition wherein at least 85% of the clay has an esd of less than about 1 μm and, as such, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 102(e) over Golley.

Moreover, SEDIGRAPH values indicate the relative coarseness or fineness of a clay composition. For instance, the composition recited in claim 1 recites, *inter alia*, an esd of at least about 85% by weight less than about 1 μm. Golley's composition appears to include at least 72 weight % of particles less than about 1 μm. *See* Office Action at page 5. Since the composition of claim 1 recites a larger percentage of smaller particles relative to Golley, the claimed composition is relatively finer and the Golley composition is relatively coarser. The skilled artisan would readily understand that the difference in weight % particles less than about 1 μm results in a highly different overall composition. That broader view of the compositions also supports Applicant's position that the pending claims are not anticipated by Golley.

Turning now to claims 21-36 directed to methods of refining kaolins, Applicant respectfully submits that the Golley does not appear to teach each element recited in

those claims. Applicant's methods are directed to, in part, "providing a degritted kaolin slurry . . . having a particle size distribution such that at least about 70% by weight of the kaolin has an esd of less than about 2 μm." *See* claim 21. The Office asserts that Golley teaches a "degritted kaolin slurry composition comprising at least 50 weight % of particles having an esd less than 2 μm." Office Action at page 5 (internal citations omitted). But the portion of Golley relied upon by the Office pertains to a raw kaolin clay crude and, specifically, the section recited by the Office provides for "mixing a raw kaolin crude … with water," followed by other processing steps. Col. 4, Lines 13-20. Golley does not appear to expressly recite a particle size distribution for the claimed degritted kaolin slurry. Accordingly, Applicant requests the withdrawal of the rejection of claims 21-36 under 35 U.S.C. § 102(e) over Golley.

As for the rejections of claims 38-46, the Office asserts that Golley "discloses a method of refining kaolin composition: 1) Preparing a degritted kaolin slurry composition having at least 50 weight % of particles having an esd less than 2 μm; 2) Grinding the kaolin slurry composition by using an optimum amount of energy in the range of 20kWh to 100 kWh per ton of kaolin; and 3) Classifying the grounded kaolin clay to obtain a composition comprising at least 72 weight % particles having an esd less than 1 μm." Office Action at page 8 (internal citations omitted). Applicant respectfully traverses for at least those reasons already discussed above and further presented below.

Amended independent claim 38 recites a method of refining kaolin that comprises, *inter alia*, "classifying the slurry to a fine fraction wherein from about 96% to about 98% by weight of the kaolin has an esd of about, 2 μm." Golley's methods do not appear to include at least classifying a fines fraction to the specific claimed range

claimed by Applicant. Specifically, it does not appear to teach that from about 96% to about 98% of the kaolin clay has an esd of less than about 2 μm. As discussed above, with respect to SEDIGRAPH esd measurements, referencing a kaolin clay percentage relative to some arbitrary esd value refers to the percentage of particles having an esd less than that arbitrary value. Thus, in disclosing "at least 72%" and using a skilled artisan's interpretation of SEDIGRAPH instrument values, Golley does not appear to include weight percentages ranging from about 96% to about 98% by weight of the kaolin. Accordingly, Golley does not teach each element of method claim 38 and Applicant respectfully requests the withdrawal of this rejection under 35 U.S.C. § 102(e).

Finally, Applicant also respectfully traverses the rejections of claims 54 and 55, which each recite methods of making kaolin slurries by dewatering kaolin clay slurries with an evaporator. Applicant surprisingly discovered that use of open-ended systems, such as those claimed, may reduce the loss in shape factor value. *See* paragraphs [0109] to [0111]. Accordingly, preparing a kaolin slurry by dewatering with an evaporator may have less impact in the loss of shape factor value and is at least useful for preparing a slurry "having a shape factor of at least about 50." The Office asserts that Golley teaches dewatering a kaolin slurry to arrive at a certain shape factor. But the cited portion of Golley refers to "grinding the particles of the naturally platy kaolin crude ore … ." Col. 6, Lines 43-44. Golley does not appear to teach the use of an evaporator, or a method of preparing a kaolin clay slurry having a shape factor of at least about 50 by dewatering a slurry with an evaporator. Accordingly, Golley does not appear to teach each element of claims 54 and 55 and cannot anticipate.

IV. REJECTION UNDER 35 U.S.C. §103(a)

Claim 37 has been rejected under 35 U.S.C. § 103(a) as obvious over Golley. Applicant respectfully points out that Golley is not available as prior art against claim 37 in an obviousness rejection, pursuant to 35 U.S.C. § 103(c). Golley and the instant application were both assigned to, or subject to an assignment to, Imerys Pigments, Inc. at the time the subject matter of the instant application was invented.

However, Applicant notes that Golley is a continuation of U.S. Patent No. 6,537,363, which was a national stage entry of International Application No. PCT/US00/08466 ("the '466 application"). The '466 application appears to have published more than a year before the earliest priority date of the instant application.[1] Accordingly, to the extent that the rejection under 35 U.S.C. § 103(a) may be reiterated if the Office cites the '466 application, Applicant respectfully traverses.

The Office indicates that Golley "disclose[s] a method of refining kaolin composition comprising 35 weight % of particles having an esd less than 0.25 μm." Office Action at page 9 (internal citations omitted). But the Office admits that Golley is "silent about the kaolin composition comprising about 40 weight% of particles having an esd less than 0.25 μm . . . ." *Id*. The Office attempts to remedy this by citing a portion of Golley for teaching that "the parameters of the centrifuge operation control the less than 0.25 μm particle content in the composition." Office Action at page 10.

[1] The '466 application, cited as International Publication No. WO 00/059840 (published October 12, 2000), has been brought to the Office's attention in a Supplemental Information Disclosure Statement filed concurrently with this Amendment.

Claim 37 depends from claim 34, which depends from claim 21. As discussed above, claim 21 is not anticipated by Golley. Applicant also submits that the skilled artisan would not have had any motivation to modify Golley as suggested by the Office to achieve the subject matter of claim 37. The Office cited portions of Golley that appear to discuss adding coarse clay components (i.e., clays having increased esd) to control the 0.25 micron content. The skilled artisan would readily understand that adding coarse clays generally reduces the overall 0.25 micron content. Accordingly, since Golley appears to disclose only the addition of coarse clay, that reference actually teaches away from the subject matter of claim 37, which increases the 0.25 micron content to at least 40%. As recited in claim 34, from which claim 37 depends, the fines fraction is adjusted by removing a portion of the fines. Not only does Golley not suggest increasing the 0.25 micron content to at least 40%, it does not disclose adjusting the 0.25 micron content by removing those fines. The skilled artisan would not have been motivated to modify Golley to include those parameters and the Office has not pointed to any proper source for such a modification. Accordingly, Applicant requests the withdrawal of the rejection under 35 U.S.C. §103(a).

V. CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and continued examination of this Application and the timely allowance of the pending claims. Should the Office have any questions about this Reply or wish to discuss this application, Applicant requests the Office contact the undersigned representative at (404)653-6441.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: May 11, 2007 By:_____

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